

Claims:

1. A light transmitting porous conductive material comprising a porous glass and a conductive oxide film formed on the outer surfaces of the porous glass and
5 on the surfaces inside the pores thereof.

2. The porous conductive material according to claim 1, wherein the resistivity of an outer surface of the porous conductive material is 10^{-4} to $10^4 \Omega \cdot \text{cm}$, the
10 resistance between the two outer surfaces of the porous conductive material is $10^{-4}k$ to $500 k\Omega$, and the specific surface area of the porous conductive material is 4 to $600 \text{ m}^2/\text{g}$.

15 3. The porous conductive material according to claim 2, wherein the resistivity of an outer surface of the porous conductive material is 10^{-4} to $10^1 \Omega \cdot \text{cm}$, the resistance between the two outer surfaces of the porous conductive material is $10^{-4}k$ to $300 k\Omega$, and the specific
20 surface area of the porous conductive material is 9 to $400 \text{ m}^2/\text{g}$.

4. The porous conductive material according to claim 1, wherein the conductive oxide film is constituted
25 by at least one conductive oxids selected from the group

consisting of SnO_2 , In_2O_3 , ITO (Sn doped In_2O_3), ZnO , PbO_2 , ZnSb_2O_6 , CdO , CdIn_2O_4 , MgIn_2O_4 , ZnGa_2O_4 , CdGa_2O_4 , Cd_2SnO_4 , Zn_2SnO_4 , Tl_2O_3 , TlOF , Ga_2O_3 , GaInO_3 , Cd_2SnO_4 , CdSnO_3 , In_2TeO_6 , InGaMgO_4 , InGaZnO_4 , $\text{Zn}_2\text{In}_2\text{O}_5$, AgSbO_3 , Cd_2GeO_4 ,
5 $\text{Cd}_2\text{Ge}_2\text{O}_7$, ZnSnO_3 , AgInO_2 , CuAlO_2 , CuGaO_2 , SrCu_2O_2 , amorphous In_2O_3 , amorphous CdO-GeO_2 , Sb doped SnO_2 , F doped SnO_2 , In doped ZnO , Ga doped ZnO and Al doped ZnO .

5. The porous conductive material according to
10 claim 4, wherein the conductive oxide film is constituted by at least one conductive oxide selected from the group consisting of SnO_2 , In_2O_3 , ITO, Sb doped SnO_2 and F doped SnO_2 .

15 6. A Graetzel type solar cell comprising the porous conductive material according to any one of claims 1 to 5 as an electrode material.

20 7. A photomultiplier comprising the porous conductive material according to any one of claims 1 to 5 as an electrode material.

8. A method for preparing a light transmitting porous conductive material comprising the steps of: (1)
25 forming a conductive oxide film on the surfaces inside the

pores of a porous glass, and (2) forming a conductive oxide film on the outer surfaces of the porous glass.

9. The method according to claim 8, wherein any
5 method selected from the group consisting of the following
methods (i) to (v) is employed in the step (1) of forming
a conductive oxide film on the surfaces inside the pores
of the porous glass: (i) a chemical vapor deposition method,
(ii) a sputtering method, (iii) an impregnation method, (iv)
10 a method wherein silanol groups present on the surface of
the porous glass are reacted with an organic metal
compound under high vacuum and the reaction product is
then oxidized by heating in air, and (v) a method wherein
a mixture of a polymer or an amine group-containing
15 organic metal compound with a raw material for the film
is applied to the surface of the porous glass and then the
polymer or the organic compound is removed by heating in
air.

20 10. The method according to claim 8, wherein
any method selected from the group consisting of the
following methods (i), (ii) and (v) is employed in the
step (2) of forming a conductive oxide film on the outer
surfaces of the porous glass: (i) a chemical vapor
25 deposition method, (ii) a sputtering method, and (v) a

method wherein a mixture of a polymer or an amine group-containing organic metal compound with a raw material for the film is applied to the surface of the porous glass and then the polymer or the organic compound is removed by
5 heating in air.

11. The method according to claim 8, wherein any method selected from the group consisting of the following methods (i), (iv) and (v) is employed in the step (1) of
10 forming a conductive oxide film on the surfaces inside the pores of the porous glass: (i) a chemical vapor deposition method, (iv) a method wherein silanol groups present on the surface of the porous glass are reacted with an organic metal compound under high vacuum and the reaction
15 product is then oxidized by heating in air, and (v) a method wherein a mixture of a polymer or an amine group-containing organic metal compound with a raw material for the film is applied to the surface of the porous glass and then the polymer or the organic compound is removed by
20 heating in air, and wherein the method (i) or (v) is employed in the step (2) of forming a conductive oxide film on the outer surfaces of the porous glass: (i) a chemical vapor deposition method, or (v) a method wherein a mixture of a polymer or an amine group-containing
25 organic metal compound with a raw material for the film is

applied to the surface of the porous glass and then the polymer or the organic compound is removed by heating in air.